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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BELLAMY, TAMIKO D

ART UNIT PAPER NUMBER

2856

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,706

Applicant(s)

PARK ET AL

Examiner

Tamiko D. Bellamy

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: A means for displacing the mass to the to the initial capacitance between the movable and fixed electrodes at side with that between the movable and fixed electrodes at the other side. The claim provides an intended use of a compensation electrode sections without providing a means to do so.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schellin et al. (2005/0039530) in view of Biebl (5,911, 157).

Re claim 1, Schellin et al. discloses a horizontal movable floating mass (5) and support beams (e.g., springs 6) extending from a beam-fixing section (e.g., edge 83, 84) to support the mass (8). As depicted in fig. 1, Schellin et al. discloses movable electrodes (15) extending from the sides of the mass (5) to a predetermined length. As depicted in

fig. 1, Schellin et al. discloses fixed electrodes (16, 17) extending from electrode-fixing sections (e.g. edges 81, 82) to a predetermined length, and alternating with the movable electrodes (15) with a predetermined gap. Schellin et al. discloses test electrodes (e.g., drive electrodes (18, 19) for displacing the mass (5) and used to detect the stationary displacement of the seismic mass (5) caused by static voltage applied to the test/drive electrodes (Pg. 1, par. 5). Schellin et al. does not specifically teach compensation electrode sections for displacing the mass in a moving direction of the mass to equalize an initial capacitance between the movable and fixed electrodes at one side with that between the movable and fixed electrodes at the other side. As depicted in fig. 1, Biebl discloses compensation electrodes (8, 9) for compensating the force of inertia attacking at the mass part (4) that occurs given an acceleration and always keeps the spacing between of the electrodes (6, 7) constant (Col. 4, lines 13-23). Therefore, to modify Schellin et al, by employing compensation electrodes sections would have been obvious to one of ordinary skill in the art at the time of the invention since Biebl teaches an acceleration sensor having these design characteristics. The skilled artisan would be motivated to combine the teachings of Schellin et al. and Biebl since Schellin et al. states that his invention is applicable to a sensor that is subject to acceleration and Biebl is directed to an acceleration sensor.

Re claim 2, the combination of Schellin et al and Biebl discloses support beams (e.g. springs) connected to the edges of a mass. While the combination of Schellin et al and Biebl do not include support beams with elastic bodies and a beam-fixing section, which are arranged in the opening formed in a central portion of the body of the mass, the

placement of a component is a design consideration clearly in the preview of one having ordinary skill in the art. The court held in In re Japikse, 86 USPQ 70 (CCPA 1950), that there would be no invention in shifting a part to another location since the operation of the device would not be modified. Therefore, to modify Schellin et al. by employing support beams in an opening in a central portion of the mass would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches its use on an acceleration sensor include support beams.

Re claim 3, as depicted in fig. 1, Schellin et al. discloses support beams (e.g., springs 6) connected to a middle portion of a mass (5). Schellin et al. does not teach that the support beams are arranged adjacent to both ends of the mass. As depicted in fig. 1, Biebl discloses support beams (e.g., springs 5) are elastic bodies and arranged adjacent to both ends of the mass (4). Therefore, to modify Schellin et al. by employing support beams arranged adjacent to both ends of the mass would have been obvious to one of ordinary skill in the art at the time of the invention since Biebl teaches an acceleration sensor having these design characteristics. The skilled artisan would be motivated to combine the teachings of Schellin et al. and Biebl since Schellin et al. states that his invention is applicable to a sensor that is subject to acceleration and Biebl is directed to an acceleration sensor.

Re claims 4-6, as depicted in fig. 1, Schellin et al. discloses movable test electrodes (19) extending from a mass (5), and a fixed test electrode (18) arranged parallel to the movable test electrode. Schellin et al. does not teach a movable compensation electrodes extending outward from both ends of the mass, and a fixed

compensation electrode arranged parallel to the movable compensation electrode. As depicted in fig. 1, Biebl discloses comb shaped movable compensation electrodes extending outward from both ends of the mass, and a fixed compensation electrode arranged parallel to the movable compensation electrode. Therefore, to modify Schellin et al. by employing a movable compensation electrodes extending outward from both ends of the mass, and a fixed compensation electrode arranged parallel to the movable compensation electrode would have been obvious to one of ordinary skill in the art at the time of the invention since Biebl teaches an acceleration sensor having these design characteristics. The skilled artisan would be motivated to combine the teachings of Schellin et al. and Biebl since Schellin et al. states that his invention is applicable to a sensor that is subject to acceleration and Biebl is directed to an acceleration sensor.

Re claim 8, as depicted in fig. 1, Schellin et al. discloses test electrodes sections that are separately provided adjacent to both ends of the mass (5). Schellin et al. does not teach compensation electrodes sections that are separately provided adjacent to both ends of the mass. As depicted in fig. 1, Biebl discloses compensation electrodes sections (8, 9) that are separately provided adjacent to both ends of the mass (4). Therefore, to modify Schellin et al. by employing compensation electrode sections separately adjacent to both ends of a mass would have been obvious to one of ordinary skill in the art at the time of the invention since Biebl teaches an acceleration sensor having these design characteristics. The skilled artisan would be motivated to combine the teachings of Schellin et al. and Biebl since Schellin et al. states that his invention is applicable to a sensor that is subject to acceleration and Biebl is directed to an acceleration sensor.

4. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schellin et al. (2005/0039530) in view of Biebl (5,911, 157) as applied to claim 1-6, and 8 above, and further in view of Schmiesing et al. (6,318,174).

Re claims 9-11, the combination of Schellin et al. and Biebl all except the limitation of the movable and fixed compensation electrodes having **projections**. Schmiesing et al. discloses movable and fixed electrodes with projections (e.g., protrusions 141, 151) in the form of nubs, bumps, spikes or protrusions (Col. 3, line 43). Therefore, to modify the combination of Schellin et al. and Biebl by employing compensation electrodes having projections would have been obvious to one of ordinary skill in the art at the time of the invention since Schmiesing et al. teaches an acceleration sensor having these design characteristics. The skilled artisan would be motivated to combine the teachings of the combination of Schellin et al. and Biebl since the combination of Schellin et al. and Biebl states that the invention is applicable to a sensor that is subject to acceleration and Schmiesing et al. is directed to an acceleration sensor.

Allowable Subject Matter

5. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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6. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

The following patents are cited to further show the state of art with respect to an accelerometer having a compensation spring for compensating the force brought to the weight:

U.S. Pat. No. (JP11051965) as to Brun et al.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (571) 272-2190.

The examiner can normally be reached on Monday - Friday 7:30 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tamiko Bellamy

T.B.

April 15, 2005

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